REMARKS

The claims are claims 1 to 12.

The application has been further amended to update the status of one of the co-pending applications cited on page 1.

Claims 6, 8 and 12 are amended in response to the rejections under 35 U.S.C. 112.

The OFFICE ACTION objects to previous drawing change. The OFFICE ACTION states that "there is no evidence in the original disclosure to support the removing of arrows from the lines in Figure 4." The OFFICE ACTION further states there appears no input to merge 46.

The Applicant respectfully submits that this is incorrect. The original application states at page 6, lines 10 and 11:

> "Figure 4 illustrates an electrical connection view of the coupling between the access adapter and the target system;"

The original application also states at page 11, lines 3 and 4:

> "Figure 4 illustrates an electrical connection view of the coupling between access adapter 2 and target system 3."

The Applicant respectfully submits that it is known in the art that display line arrows are not customarily used on electrical connection diagrams to show signal flow. Thus the original application does provide support for removing the arrows in Figure 4. Since the electrical connections of Figure 4 do not show signal flow, there is no lack of showing the input to merge 46.

The OFFICE ACTION repeats the rejection of the FINAL REJECTION of December 12, 2003 (Paper No. 13) without comment on the Applicant's response of February 24, 2004. The Applicant respectfully submits that since the original application states

that Figure 4 is a drawing of the type that ordinarily does not include signal direction arrows, the amended Figure 4 is proper. The OFFICE ACTION does not state why this reasoning is incorrect. Accordingly, the amendments to Figure 4 are proper.

Claims 6 to 12 were rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The OFFICE ACTION states at paragraph 6-1 on page 3 that recitation of mode inputs to the input switch and the output switch without stating that both mode inputs must be the same makes the claim unclear and would require undue experimentation for one skilled in the art to make and use the claimed invention.

The Applicant respectfully submits that the Examiner's arguments are incorrect. In the first instance, the Applicant is not aware of any requirement that a claimed apparatus operate under all possible input conditions. Accordingly, the existence of a set of input conditions such as pointed out by the Examiner that would operate incorrectly cannot make the claimed elements improperly described under 35 U.S.C. 112. This application includes a description that would enable one skilled in the art to select compatible modes. The original application stated at page 19, lines 3 to 10:

> "Input switch 201 and output switch 202 route the input signal TDI to one of a plurality of paths according to a mode input. The first path is bypass path 203. This bypasses all circuits in the module. The second path is serial scan path 204. Serial scan path 204 is a serial connection of all registers visible via the serial scan path interface in the current module. The third path concerns the alternate data transfer protocol."

This discloses three paths selected by the mode inputs to input switch 201 and output switch 203. The first path is bypass path 203. This is claimed in claim 8 when both the input switch and the output switch receive a bypass path mode signal. The second path is serial scan path 204. This is recited in claim 6 as "said input switch connecting said serial test data input to said serial input of said serial scan path upon receiving a serial scan path mode signal at said first mode input" and "said output switch connecting said serial output of said serial scan path to said test data output upon receiving said serial scan path mode signal on said second mode input." The third path is the alternative data transfer protocol via start bit detector 210. This is recited in claims 6 as "said input switch...connecting said serial test data input to said start bit detector input of said start bit detector upon receiving an alternate data transfer protocol mode signal at said first mode input" and "said output switch...connecting said start bit detector output of said start bit detector to said test data output upon receiving said alternate data transfer protocol mode signal at said second mode input." One skilled in the art need only select the two mode inputs having the same mode names in claims 6 and 8 (bypass path mode signal, serial scan path mode signal and alternate data transfer protocol mode signal) to provide an operable combination as taught in the above quoted portion of page 19. Thus the original application does teach one skilled in the art how to use the combination of claim 6.

Finally, the very limited number of combinations recited in claim 6 negates any requirement for undue experimentation. Even if the mode signal names recited in claims 6 and 8 were not the same for compatible modes, undue experimentation would not be required. There are only 4 possible combinations of the two modes for the two switches recited in claim 6 and only 8 possible combinations of modes in claim 8. The Applicant respectfully submits that one

skilled in the art would be able to check all combinations without undue experimentation. The Examiner points out an inoperable combination. Assuming that one skilled in the art is no more knowledgeable than the Examiner, the person skilled in the art would recognize the other inoperable combination and the operable combinations without great effort. Thus no undue experimentation would be required. Accordingly, claims 6 and 8 are not improper by failure of the specification to describe how to make and use the invention.

Claims 6 to 12 were rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps as required by MPEP §2172.01. The OFFICE ACTION states that claim 6 omits the step of being a selected module "because any nonselected module will be nonresponsive to data on the serial connection."

Claim 6 is not incomplete by failure to recite an essential step. Firstly, claim 6 is an apparatus claim and does not recite any steps. Secondly, claim 6 does not recite "nonselected module" or making a module "nonresponsive to data on the serial connection." These recitations are in method claims 1 to 5 which are not at issue in this rejection. Claim 6 recites that the input switch and the output switch route data through the serial scan path upon receiving a serial scan path mode signal and route data through the start bit detector upon receiving the alternative data transfer protocol mode signal. Claim 6 recites how the start bit detector responds to the data received on the serial data input when in this alternative data transfer protocol mode. Claim 6 does not recite that the module is responsive to the data received on the serial data input when the module receives the serial scan path mode signal. Thus the module is made insensitive to the serial scan data in the serial scan path mode. In the serial scan path mode the input data does not reach the start bit detector and thus

the module does not respond to this data. In the serial scan path mode, the module merely passes the data along the serial chain as recited in claim 6 in the serial scan path mode (see the application at page 19, lines 7 to 9). Accordingly, this rejection should be withdrawn.

The OFFICE ACTION states at paragraph 11, subparagraph (5) on page 6:

> "(5) For rejections under 35 U.S.C. 112, second paragraph, "This module is made insensitive to the serial scan data in the serial scan path mode" (page 11, third paragraph, paper #14)."

The OFFICE ACTION further states at paragraph 12-4 on page 7:

> "12-5. Applicant's argument (5) is not persuasive. Applicant seems arguing that nonselected module is a module in the serial scan path mode, which has no direct support in the original disclosure because it makes "bypass path 203" meaningless."

This application states at page 19, lines 2 to 17:

> "Input switch 201 and output switch 202 route the input signal TDI to one of a plurality of paths according to a mode input. The first path is bypass path 203. This bypasses all circuits in the module. The second path is serial scan path 204. Serial scan path 204 is a serial connection of all registers visible via the serial scan path interface in the current module. The third path concerns the alternate data transfer protocol.
>
> "When selected as the output of input switch 201, start bit detect unit 210 searches for the start bit of the opposite digital state. If this start bit is not detected, then the data is coupled to one input of output switch 202. If this start bit is detected, then the next predetermined number of bits is transferred to data register IN 211. Data register IN 211 is visible to the programmable digital processor core 220."

This portion of the application clearly describes how the module is responsive to the data in the serial scan path when employing the alternative data transfer protocol. This portion does not state that the module is responsive to data in the serial scan path when in the serial scan path mode. The usefulness of the bypass mode (not recited in claim 6 but appearing only in claim 8) is taught in the application at page 18, lines 2 to 7. This teaching of the application indicates that the bypass mode reduces the length of the serial scan path to the desired register. Thus this limitation is not meaningless. Accordingly, the recitations of claim 6 are proper and this rejection should be withdrawn.

Claims 6 to 12 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The OFFICE ACTION points out the limitations "said serial data input" and "said serial data output" in lines 23 and 29 of claim 6 as having insufficient antecedent basis. The OFFICE ACTION states that claim 6 recites the limitation "said mode input" in lines 31 and 34 which are vague and indefinite because both lines 21-22 and 28 recite "a mode input" in claim 6. The OFFICE ACTION states that the prior response failed to delete the recitation of "greater than a first predetermined number." The OFFICE ACTION states that claim 8 recites the limitation "said mode input" in lines 7 and 10 which is vague and indefinite because both lines 21-22 and 28 of claim 6 recite "a mode input."

Claim 6 has been amended to change "said serial data input" to "said serial input" at lines 23 and 25-26, and to change "said serial data output" to "said serial output" at line 29. Claim 6 is also amended to change "said serial data input" at line 25-26 to "said start bit detector input" and to change "said serial data output" at line 33 to "said start bit detector output." The

Applicant respectfully submits that the amended language is proper under 35 U.S.C. 112.

Claim 6 has been amended to recite that the input switch has "a first mode input" and that the output switch has "a second mode input." Claim 8 has been similarly amended. This amended language clearly distinguishes between the two mode inputs and makes claims 6 and 8 particular and definite under 35 U.S.C. 112.

The prior response incorrectly marked the language "greater than a first predetermined number" in underlining rather than in strikeout. The currently amended claim 6 includes the proper marking.

The Applicant respectfully submits that all the present claims are allowable for the reasons set forth above. Therefore early entry of this amendment, reconsideration and advance to issue are respectfully requested.

If the Examiner has any questions or other correspondence regarding this application, Applicants request that the Examiner contact Applicant's attorney at the below listed telephone number and address to facilitate prosecution.

Texas Instruments Incorporated
P.O. Box 655474 M/S 3999
Dallas, Texas 75265
(972) 917-5290
Fax: (972) 917-4418

Respectfully submitted,

Robert L. Marshall

Robert D. Marshall, Jr.
Reg. No. 28,527